



SEQUENCE LISTING

<110> GOLDENBERG, DAVID M.
HANSEN, HANS J.
LEUNG, SHUI-ON

<120> CHIMERIC, HUMAN AND HUMANIZED ANTI-GRANULOCYTE
ANTIBODIES AND METHODS OF USE

<130> 40923-0134US1

<140> 10/672,278

<141> 2003-09-29

<150> PCT/GB03/04229

<151> 2003-09-30

<150> 60/414,341

<151> 2002-09-30

<160> 51

<170> PatentIn Ver. 3.2

<210> 1

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric amino
acid sequence

<400> 1

Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser	Asn	Gly	Asn	Thr	Tyr	Leu	Glu
1				5					10					15	

<210> 2

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric amino
acid sequence

<400> 2

Lys	Val	Ser	Asn	Arg	Phe	Ser
1				5		

<210> 3

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 3

Phe Gln Gly Ser His Val Pro Pro Thr
1 5

<210> 4

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 4

Asn Tyr Gly Met Asn
1 5

<210> 5

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 5

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe Lys
1 5 10 15

Gly

<210> 6

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 6

Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr
1 5 10

<210> 7

<211> 4

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<220>
 <221> MOD_RES
 <222> (2)
 <223> Lys (HSG)

<220>
 <221> MOD_RES
 <222> (4)
 <223> Lys (HSG)

<220>
 <223> c-term amidated

<400> 7
 Phe Lys Tyr Lys
 1

<210> 8
 <211> 392
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(339)

<400> 8
 agc att gtg atg acc cag act cca ctc tcc ctg cct gtc agt ctt gga 48
 Ser Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
 1 5 10 15
 gat caa gcc tcc atc tct tgc aga tct agt cag agc att gta cat agt 96
 Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
 20 25 30
 aat gga aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct 144
 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 cca aac ctc ctc atc tac aaa gtt tcc aac cga ttt tct ggg gtc cca 192
 Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 gac agg ttc agt ggc agt gga tca ggg aca gat ttc aca ctc aag atc 240
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80

agc aga gtg gag gct gag gat ctg gga gtt tat tac tgc ttt caa ggt 288
 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
 85 90 95

tca cat gtt cct ccg acg ttc ggt gga ggc acc aag ctg gaa atc aaa 336
 Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105 110

cgg gctgatgctg caccaactgt atccatcttc ccaccatcca gtgaggatcc ggc 392
 Arg

<210> 9
 <211> 113
 <212> PRT
 <213> Mus musculus

<400> 9
 Ser Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
 1 5 10 15
 Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
 85 90 95
 Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105 110

Arg

<210> 10
 <211> 366
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(366)

<400> 10
 cag gtc caa ctg cag gag tct gga cct gag ctg aag aag cct gga gag 48
 Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
 1 5 10 15

aca gtc aag ata tcc tgc aag gct tct ggg tat acc ttc aga aac tat 96
 Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
 20 25 30
 gga atg aac tgg gtg aaa cag gct cca gga aag ggt tta aag tgg atg 144
 Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
 35 40 45
 ggc tgg ata aac acc tac act gga gag cca aca tat gct gat gac ttc 192
 Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 50 55 60
 aag gga cgg ttt gcc ttc tct ttg gaa acc tct gcc agc act gcc tat 240
 Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 ttg cag atc aac aac gtc aaa aat gag gac acg gct aca tat ttc tgt 288
 Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
 85 90 95
 gca aga aag gga tgg atg gat ttc aac ggt agt agc ctc gac tac tgg 336
 Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 100 105 110
 ggc caa ggg acc acg gtc acc gtc tcc tca 366
 Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 11
 <211> 122
 <212> PRT
 <213> Mus musculus

<400> 11
 Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
 1 5 10 15
 Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
 20 25 30
 Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
 35 40 45
 Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 50 55 60
 Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
 85 90 95
 Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 12

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric
 cMN3Vk nucleotide sequence

<220>

<221> CDS

<222> (1)..(339)

<400> 12

gac atc cag ctg acc cag act cca ctc tcc ctg cct gtc agt ctt gga	48
Asp Ile Gln Leu Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly	
1 5 10 15	
gat caa gcc tcc atc tct tgc aga tct agt cag agc att gta cat agt	96
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	
20 25 30	
aat gga aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct	144
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	
35 40 45	
cca aac ctc ctc atc tac aaa gtt tcc aac cga ttt tct ggg gtc cca	192
Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro	
50 55 60	
gac agg ttc agt ggc agt gga tca ggg aca gat ttc aca ctc aag atc	240
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile	
65 70 75 80	
agc aga gtg gag gct gag gat ctg gga gtt tat tac tgc ttt caa ggt	288
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly	
85 90 95	
tca cat gtt cct ccg acg ttc ggt gga ggc acc aag ctg gag atc aaa	336
Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys	
100 105 110	
cgt	339
Arg	

<210> 13

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric
cMN3V_k amino acid sequence

<400> 13

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Asp Ile Gln Leu Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
 1             5             10             15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
          20             25             30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
          35             40             45
Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
          50             55             60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65             70             75             80
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
          85             90             95
Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
          100            105            110

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Arg

<210> 14

<211> 366

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric
cMN3V_H nucleotide sequence

<220>

<221> CDS

<222> (1)..(366)

<400> 14

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cag gtc caa ctg cag gag tct gga cct gag ctg aag aag cct gga gag   48
Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
 1             5             10             15
aca gtc aag ata tcc tgc aag gct tct ggg tat acc ttc aga aac tat   96
Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
          20             25             30
gga atg aac tgg gtg aaa cag gct cca gga aag ggt tta aag tgg atg   144
Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
          35             40             45

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ggc tgg ata aac acc tac act gga gag cca aca tat gct gat gac ttc 192
 Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 50 55 60

aag gga cgg ttt gcc ttc tct ttg gaa acc tct gcc agc act gcc tat 240
 Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80

ttg cag atc aac aac gtc aaa aat gag gac acg gct aca tat ttc tgt 288
 Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
 85 90 95

gca aga aag gga tgg atg gat ttc aac ggt agt agc ctc gac tac tgg 336
 Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 100 105 110

ggc caa ggg acc acg gtc acc gtc tcc tca 366
 Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 15

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric
 CMN3VH amino acid sequence

<400> 15

Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
 1 5 10 15

Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
 20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
 35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 50 55 60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80

Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
 85 90 95

Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 16
 <211> 108
 <212> PRT
 <213> Homo sapiens

<400> 16
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ile Lys Tyr
 20 25 30
 Leu Asn Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Glu Ala Ser Asn Leu Gln Ala Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Gln Ser Leu Pro Tyr
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Val Gln Ile Thr Arg
 100 105

<210> 17
 <211> 113
 <212> PRT
 <213> Mus musculus

<400> 17
 Ser Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
 1 5 10 15
 Asp Gln Ala Ser Ile Ser Cys Gln Ser Ser Gln Ser Ile Val His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Ile Gly Val Tyr Tyr Cys Phe Gln Gly
 85 90 95
 Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105 110

Arg

<210> 18
 <211> 113
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Humanized
 amino acid sequence

<400> 18
 Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Ser Ile Ser Cys Gln Ser Ser Gln Ser Ile Val His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Gln Gln Lys Pro Gly Lys Ala
 35 40 45
 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile
 65 70 75 80
 Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Phe Gln Gly
 85 90 95
 Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110

Arg

<210> 19
 <211> 126
 <212> PRT
 <213> Homo sapiens

<400> 19
 Pro Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Arg Ser
 20 25 30
 Ala Ile Ile Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Gly Ile Val Pro Met Phe Gly Pro Pro Asn Tyr Ala Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe Tyr Phe Cys
 85 90 95

Ala Gly Gly Tyr Gly Ile Tyr Ser Pro Glu Glu Tyr Asn Gly Gly Leu
 100 105 110

Val Thr Val Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser
 115 120 125

<210> 20

<211> 122

<212> PRT

<213> Mus musculus

<400> 20

Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
 1 5 10 15

Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
 20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
 35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 50 55 60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80

Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
 85 90 95

Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 21

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized
 amino acid sequence

<400> 21

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
 20 25 30

Gly Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 50 55 60
 Lys Gly Arg Phe Ala Phe Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe Tyr Phe Cys
 85 90 95
 Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 100 105 110
 Gly Gln Gly Thr Pro Val Thr Val Ser Ser
 115 120

<210> 22
 <211> 11
 <212> PRT
 <213> Homo sapiens

<400> 22
 Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser
 1 5 10

<210> 23
 <211> 534
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 nucleotide sequence encoding light chain amino
 acid sequence

<220>
 <221> CDS
 <222> (21)..(64)

<220>
 <221> CDS
 <222> (147)..(495)

<400> 23
 tctagacaca ggacctcacc atg gga tgg agc tgt atc atc ctc ttc ttg 50
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu
 1 5 10
 gta gca aca gct ac aggtaagggg ctcacagtag caggcttgag gtctggacat 104
 Val Ala Thr Ala Thr
 15

atatatgggt gacaatgaca tccactttgc ctttctctcc ac a ggt gtc cac tcc 159
 Gly Val His Ser

gac atc cag ctg acc cag agc cca agc agc ctg agc gcc agc gtg ggt 207
 Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 20 25 30 35

gac aga gtg tcc atc tct tgt aga tcc agt cag agc att gta cat agt 255
 Asp Arg Val Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
 40 45 50

aat gga aac acc tat tta gaa tgg tac cag cag aag cca ggt aag gct 303
 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Gln Gln Lys Pro Gly Lys Ala
 55 60 65

cca aag ctg ctg atc tac aaa gtt tcc aac cga ttt tcc gga gtg cca 351
 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 70 75 80

gac aga ttc agc ggt agc ggt agc ggt acc gac ttc acc ttc acc atc 399
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile
 85 90 95

agc agc ctc cag cca gag gac atc gcc acc tac tac tgc ttt caa ggt 447
 Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Phe Gln Gly
 100 105 110 115

tca cat gtt cct ccg acg ttc ggc ggc ggg acc aag gtg gag atc aaa 495
 Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Val Glu Ile Lys
 120 125 130

cgtgagtaga atttaaactt tgcttcctca gttggatcc 534

<210> 24

<211> 131

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 light chain amino acid sequence

<400> 24

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15

Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20 25 30

Ser Val Gly Asp Arg Val Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile
 35 40 45

Val His Ser Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Gln Gln Lys Pro
 50 55 60

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser
65 70 75 80

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
85 90 95

Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
100 105 110

Phe Gln Gly Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Val
115 120 125

Glu Ile Lys
130

<210> 25

<211> 729

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence encoding heavy chain amino
acid sequence

<220>

<221> CDS

<222> (23)..(66)

<220>

<221> CDS

<222> (149)..(528)

<400> 25

ctcgagcaca caggacctca cc atg gga tgg agc tgt atc atc ctc ttc ttg 52
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu
1 5 10

gta gca aca gct ac aggtaagggg ctcacagtag caggcttgag gtctggacat 106
Val Ala Thr Ala Thr
15

atatatgggt gacaatgaca tccactttgc ctttctctcc ac a ggt gtc cac tcc 161
Gly Val His Ser

cag gtc caa ctg cag cag tct gga gct gag gtc aag aag cct gga tct 209
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
20 25 30 35

agc gtc aag gtc tcc tgc aag gct tct ggg tat acc ttc aga aac tat 257
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
40 45 50

gga atg aac tgg gtg aga cag gct cca gga cag ggt tta gag tgg atg 305

Gly Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 55 60 65
 ggc tgg ata aac acc tac acc ggt gag cca aca tat gct gat gac ttc 353
 Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 70 75 80
 aag gga cgg ttt gcc ttc aca gcc gac gaa tct acc aac act gcc tat 401
 Lys Gly Arg Phe Ala Phe Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr
 85 90 95
 atg gag ctg tct agc ttg aga tct gag gac acg gct ttc tat ttc tgt 449
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe Tyr Phe Cys
 100 105 110 115
 gca aga aag gga tgg atg gat ttc aac ggt agt agc ctc gac tac tgg 497
 Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 120 125 130
 ggc caa ggg acc ccg gtc acc gtc tcc tca ggtgagtcct tacaacctct 547
 Gly Gln Gly Thr Pro Val Thr Val Ser Ser
 135 140
 ctcttctatt cagcttaaatt agattttact gcatttggtg ggggggaaat gtgtgtatct 607
 gaatttcagg tcatgaagga ctagggacac cttgggagtc agaaagggtc attgggagcc 667
 cgggctgatg cagacagaca tcctcagctc ccagacttca tggccagaga tttataggat 727
 cc 729

<210> 26

<211> 141

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic heavy chain amino acid sequence

<400> 26

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
 Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys
 20 25 30
 Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 35 40 45
 Arg Asn Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 50 55 60
 Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala
 65 70 75 80

Asp Asp Phe Lys Gly Arg Phe Ala Phe Thr Ala Asp Glu Ser Thr Asn
 85 90 95
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe
 100 105 110
 Tyr Phe Cys Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu
 115 120 125
 Asp Tyr Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser
 130 135 140

<210> 27
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 linker

<400> 27
 Gly Gly Gly Ser
 1

<210> 28
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 primer

<400> 28
 acagtcactg agctgg

16

<210> 29
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 primer

<400> 29
 gccggatcct gactggatgg tgggaagatg gataca

36

<210> 30
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 30
 gacattcagc tgacccagtc tcca 24

 <210> 31
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 31
 ctactggat ggtgggaaga tggatacagt tgg 33

 <210> 32
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 32
 aggtsmarct gcagsagtcw gg 22

 <210> 33
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 probe

 <400> 33
 agactgcagg agagctggga aggtgtgcac 30

 <210> 34
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 probe

<400> 34
gaagcacacg actgaggcac ctccagatgt

30

<210> 35
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
linker

<400> 35
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 36
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 36
Phe Lys Tyr Lys
1

<210> 37
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<221> MOD_RES
<222> (1)
<223> Lys (DTPA)

<220>
<221> MOD_RES
<222> (3)
<223> Lys (DTPA)

<220>
<221> MOD_RES
<222> (4)
<223> Lys (Tscg-Cys); Cys not part of peptide backbone

<220>
 <223> c-term amidated

<400> 37
 Lys Tyr Lys Lys
 1

<210> 38
 <211> 149
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 38
 ggctcaccgg tgtagggtgtt tatccagccc atccactcta aaccctgtcc tggagcctgt 60
 ctcaccagtc tcattccata gtttctgaag gtatacccag aagccttgca ggagaccttg 120
 acgctagatc caggcttctt gacctcagc 149

<210> 39
 <211> 149
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 39
 tcgaggctac taccggttgaa atccatccat ccctttcttg cacagaaata gaaagccgtg 60
 tcctcagatc tcaagctaga cagctccata taggcagtgt tggtagattc gtcggctgtg 120
 aaggcaaacc gtccttgaa gtcacagc 149

<210> 40
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 40
 ccaactgcag cagtctggag ctgagggtcaa gaagcct 37

<210> 41
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 41

ggctcaccgg tgtaggtgtt

20

<210> 42

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 42

acctacaccg gtgagccaac atatgctgat gacttcaagg gacg

44

<210> 43

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 43

ggtgaccggg gtcccttggc cccagtagtc gaggctacta ccgttga

47

<210> 44

<211> 140

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 44

gaaactttgt agatcagcag ctttggagcc ttacctggct tctgctggta ccattctaaa 60
taggtgtttc cattactatg tacaatgctc tgactggatc tacaagagat ggacactctg 120
tcaccacgc tggcgctcag 140

<210> 45

<211> 131

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 45
 ggtcccgcgcg ccgaacgtcg gaggaacatg tgaaccttga aagcagtagt aggtggcgat 60
 gtcctctggc tggaggctgc tgatggtgaa ggtgaagtcg gtaccgctac cgctaccgct 120
 gaatctgtct g 131

<210> 46
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 46
 cagctgaccc agagcccaag cagcctgagc gccagcgtgg g 41

<210> 47
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 47
 ctggcactcc ggaaaatcgg ttggaaactt tgtagatcag cag 43

<210> 48
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 48
 caaccgattt tccggagtgc cagacagatt cagcggg 37

<210> 49
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 49
 gatctccacc ttggtcccgc cgccgaacgt cgg 33

<210> 50
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
linker

<400> 50
agcttgcggc cgc

13

<210> 51
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
linker

<400> 51
gatcgcggcc gca

13